

Further study of this species indicates that there is considerable lateral movement of several parts of the genital capsule, and that this may result in considerable difference of appearance between one specimen and another. The widely expanded condition is shown in my own drawing (Ross, 1938, p. 120, Fig. 29), and a more contracted condition is illustrated by Denning in the description of *ranea*. Dr. Denning has kindly loaned me his type material for study.

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ZOOLOGY.—*An analysis of specific homonyms in zoological nomenclature*.¹
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In the systematic study of animals, which is the science known as systematics or taxonomy, the scientific names of the animals are at once an essential tool and a source of much confusion and discussion because of their vast number and the complexity of our system of using them. A branch of systematics has grown up which concerns itself entirely with these names and the principles to be used in applying them; this is nomenclature. Its principal aims are to formulate and establish systems under which each species can be given a distinctive name and to provide machinery to insure as great stability or permanence as possible to each of these names.

One of the difficulties which plague the taxonomist in his use of scientific names is the situation that arises when the same name is inadvertently given to two different species of animals. If a name is to be useful in exact science it must always refer to but one species, and always to the same species. Therefore, we cannot permit the use of one name for two or more species, and when duplicate names are found we must provide another name for one of the species. Identical names used for two or more species are called homonyms. They may be further classified by calling the older of the two usages the senior homonym and the younger one the junior homonym.

¹ Received April 2, 1948.

The discovery of homonyms very often results in a change of name for one of the species, and this type of change accounts for a large proportion of the annoying alterations of names that have given taxonomy a bad reputation among biologists. It is thus of special importance to taxonomists to study the problem of homonymy and find a way to protect names from this major source of instability.

The treatment of homonymy of specific names in zoological nomenclature is one of the oldest problems with which the writers of rules of nomenclature have had to deal, and it is one that has not been solved on any universal basis even after 75 years of code-building. It is therefore not unreasonable to reexamine the problem to present a possible new approach.

In the various nomenclatural codes that have been proposed, the treatment of the problem of homonymy differs widely. The reason for this divergent treatment is not clear, except on the assumption that none of them have given real satisfaction. It is therefore believed useful to examine the procedures that have been proposed heretofore and to analyze the requirements of a satisfactory system.

(I) The first method we will examine for dealing with homonyms is that prescribed by the International Rules of Zoological Nomenclature in articles 35 and 36. It is

the most direct and the simplest approach but may not be the one giving the most desirable results. This treatment is based on two principles: (1) "A specific name is to be rejected as a homonym when it has previously been used for some other species or subspecies of the same genus" (from article 35), and (2) "rejected homonyms can never be used again" (from article 36).² This is a

² The term specific name is here used in its currently official meaning, in which the combination of the generic and the trivial names is a specific name. Article 2 holds that the scientific designation of a species is binomial, and it is therefore only the binomial combination that can be a homonym.

simple and direct solution, and it has been reinforced by Opinion 83. Unfortunately the ramifications of nomenclature are not as simple as this rule, and names do not conform to a pattern of being irrevocably either "homonyms" or "not homonyms" at any given time.

This can be illustrated by diagrams of the eight major types of homonyms (Fig. 1). You may recognize in these diagrams your old friends *X-us albus* and *Y-us albus*. In these diagrams two genera are represented in parallel vertical columns. The passage of time as one reads down each diagram is indicated by the dates at the left, and the

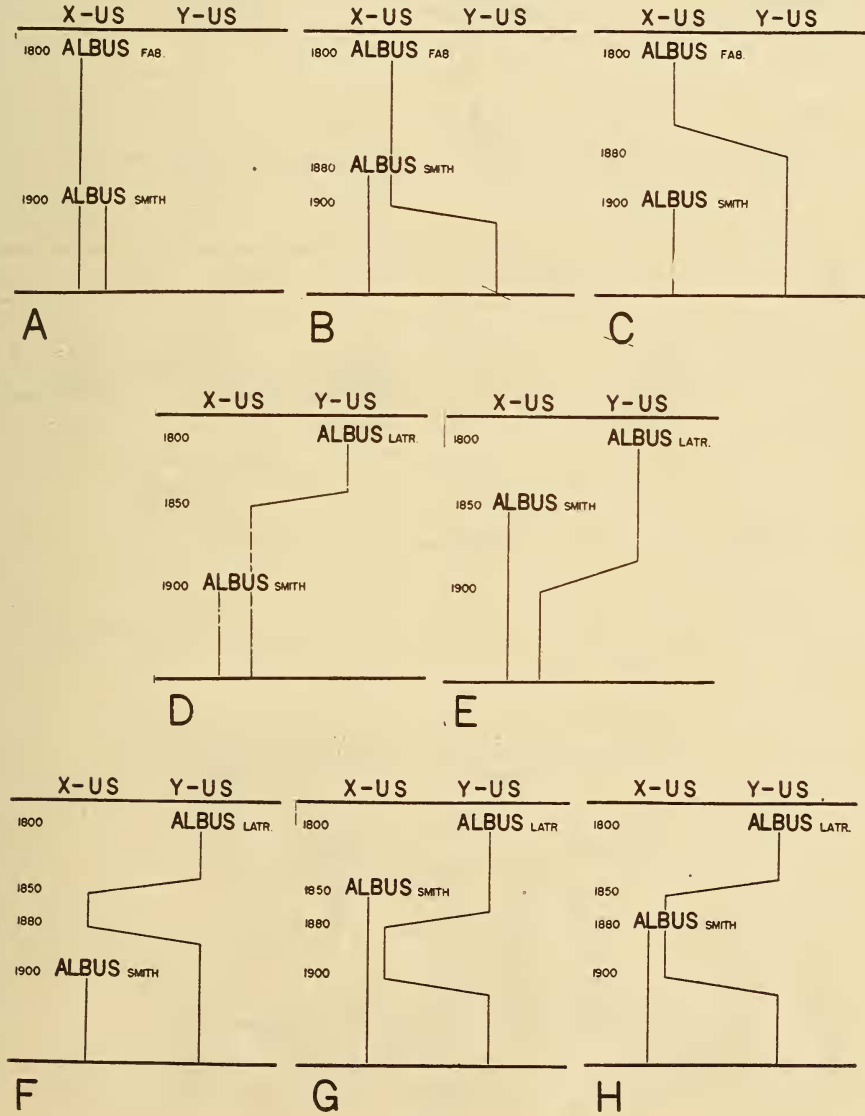


FIG. 1

subsequent history of each specific name is indicated by the solid line beneath it. The heavy horizontal line at the bottom represents the time at which the homonymy is discovered. In A, *albus* was proposed twice in *X-us*, producing unequivocal homonymy from 1900 on. B is just like A except for the later removal of one of the species to *Y-us*. It would be just the same if it had been the other name that was removed. In C the older name has been removed before the proposal of the second name. In D the two

were originally proposed in separate genera, but by the time the second was proposed in *X-us*, the older name had been transferred to *X-us*, producing unquestionable homonymy. E is similar except that the transfer of the older name is later than the proposal by Smith. And F, G, H are the same as D and E except that the transfer of the older name to *X-us* was temporary—in F entirely prior to Smith, in G entirely subsequent to Smith, and in H partly before and partly after Smith.

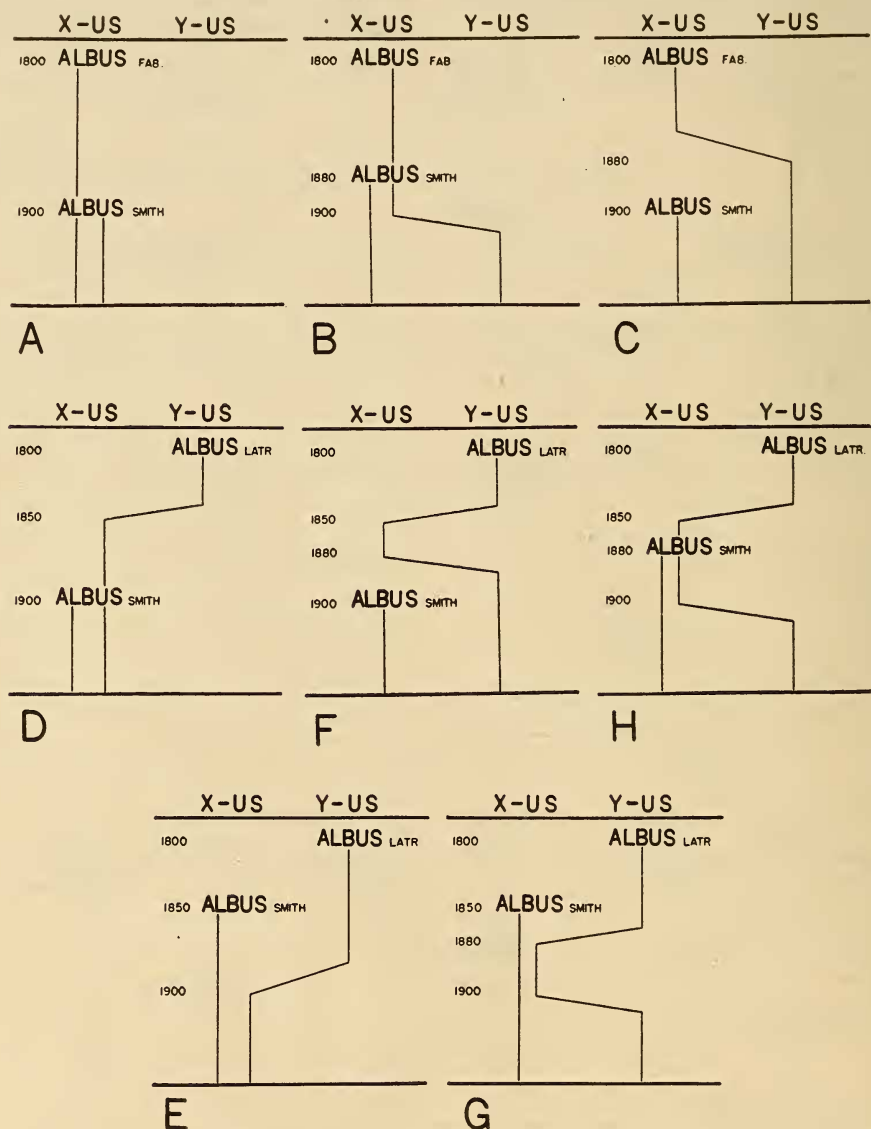


FIG. 2

Under the International Rules every one of these eight types of homonyms requires a change of name, because in every case there has been combined with *X-us* a name *albus* that is older than *X-us albus* Smith 1900. This is the rigid interpretation of the present wording of the Rules, which has been followed by many taxonomists but by no means by all.

Many taxonomists have felt that in some of these cases, such as diagram F in which the homonymy was of a temporary historical nature, it is not really necessary to replace the 1900 name. They have argued that a distinction of some sort should be made to prevent the change of such names.

(II) The question of whether all homonyms should be treated alike has led to wide discussion of a possible distinction between two types called primary and secondary homonyms, so that different treatment might be accorded them after revision of this part of the Rules. There have been at least two definitions of primary and secondary homonyms, but the one most commonly known is this. A homonym is primary if the names were originally proposed in the same genus; it is secondary if the two names occur in the same genus only through transfer of one from another genus. It is argued that all primary homonyms must be replaced, but that secondary homonyms should require replacing only if the names are still in the same genus. The examples in the top row of Fig. 1 (A, B, C) are primary, since the names were originally in the same genus; all the rest are secondary, under this definition, because the names were originally in different genera. A, B, C require replacing of the younger name, since these are primary homonyms, but D and E also require replacing, because both names are currently in use in *X-us*. Only F, G, and H can be saved by this procedure. Stability of the names is indicated by a tabulation, thus:

Method	Change	Keep
I. International Rules	8	0
II. Primary-Secondary (original genus)	5	3

(III) A third school employs primary and secondary in a very different sense. Here, a homonym is primary if it was a homonym

at the time of its proposal, whether this fact was recognized or not; it is secondary if it was valid when proposed and became a homonym later by other action.

Again, the primary homonyms are treated as in the International Rules—they must be replaced. And secondary homonyms are considered to be such only as long as the two names remain in the same genus. In Fig. 2 we find the top two rows representing the primary homonyms under this definition. A, B, C, D, F, and H are primary, since the later name was already preoccupied by an older combination with *X-us*. But E, which is secondary, must also be replaced, since the names are both in current use in *X-us*. This would appear in the stability tabulation, thus:

Method	Change	Keep
I. International Rules	8	0
II. Pri-Sec (original genus)	5	3
III. Pri-Sec (validity when proposed)	7	1

(IIIa) A variant of the third procedure might be required by those persons who believe that temporary transfer of a name into *X-us* does not preoccupy the name for later use in *X-us*. In this case, A, B, C, D, and E would be primary. This would give results in the stability table of Change 5, Keep 3.

The first of these procedures for separating homonyms into primary and secondary (our second system) is based on two new principles (see Fig. 1): (1) The fact that the identical names were originally proposed in the same genus is held to be of first importance, making the top row primary. In this manner, in Fig. 3, diagram A is set apart from diagram D, although they are identical except for the original assignment of the names, yet we must take the same action in the two cases because there is actual homonymy in each. They must be treated alike even though one is primary and one secondary. In diagrams B and H, which also are identical except for the original genus of the names, we should be required to change a name in B and not in H because B is primary and H is secondary. This time we do not treat them alike, although they differ in exactly the same way. There appears to be no justification for

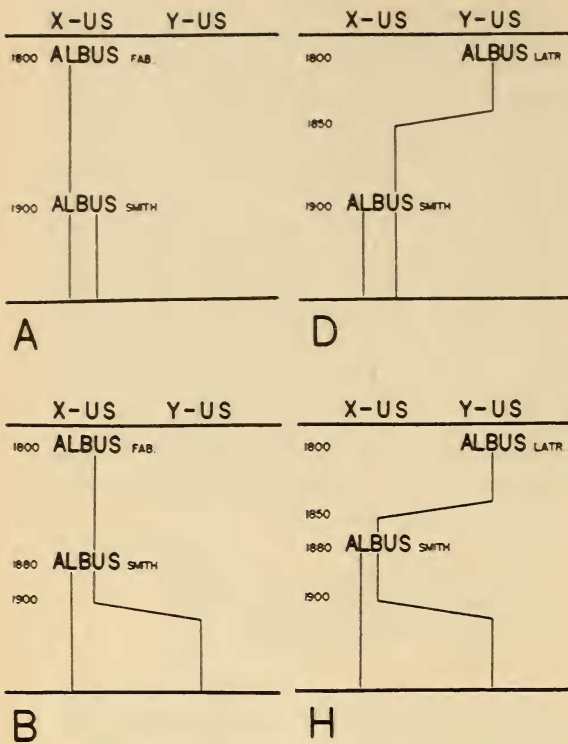


FIG. 3

these distinctions, and there also appears to be no basis for the principle of segregating homonyms on the basis of their original assignment. (2) A secondary homonym must be replaced only if the older name is still in the same genus at the time the homonym is discovered. There can be no question that the younger name in diagram D must be replaced, because there is active homonymy at the present time, but if in diagram H it is not necessary to rename the younger name, why must we do so in diagram B? Merely because of the accident of the original generic assignment of the older name? There appears to be no justification for the use of this principle either.

The second procedure for separating homonyms into primary and secondary uses another new principle (see Fig. 4). It places first importance upon the fact that Smith in 1850 (in E) was correct in believing that the name *albus* had never been used before in the genus *X-us*, whereas in D he failed in 1900 to recognize the older name. D is therefore called primary and E secondary. But in these cases if the older name had been

later removed from *X-us* (H and G, in which H is called primary and G secondary) we would be required under this third procedure to replace the newer name in H (because it was a primary homonym) and would not be required to replace it in G (where it is secondary). Again we find that D (primary) and E (secondary) must be treated alike, whereas H (primary) and G (secondary) must be treated differently. There appears to be no reason for such a distinction.

In summarizing these last two procedures, it is apparent that there has appeared the new principle that a name may not be replaced unless the older name is still in the same genus when the homonymy is discovered, as in D and E of Fig. 4. But this principle is applied only to the class of secondary homonyms as variously defined. It would require a change in D and in E, and it would require a change in H but not G. There does not seem to be any reason why all types of homonyms should not be treated in this way. In other words, if there is no real justification for the distinction

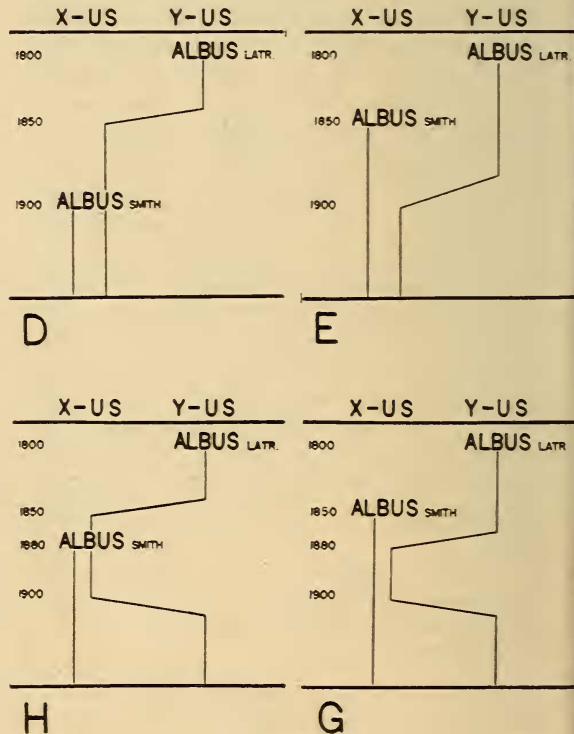


FIG. 4

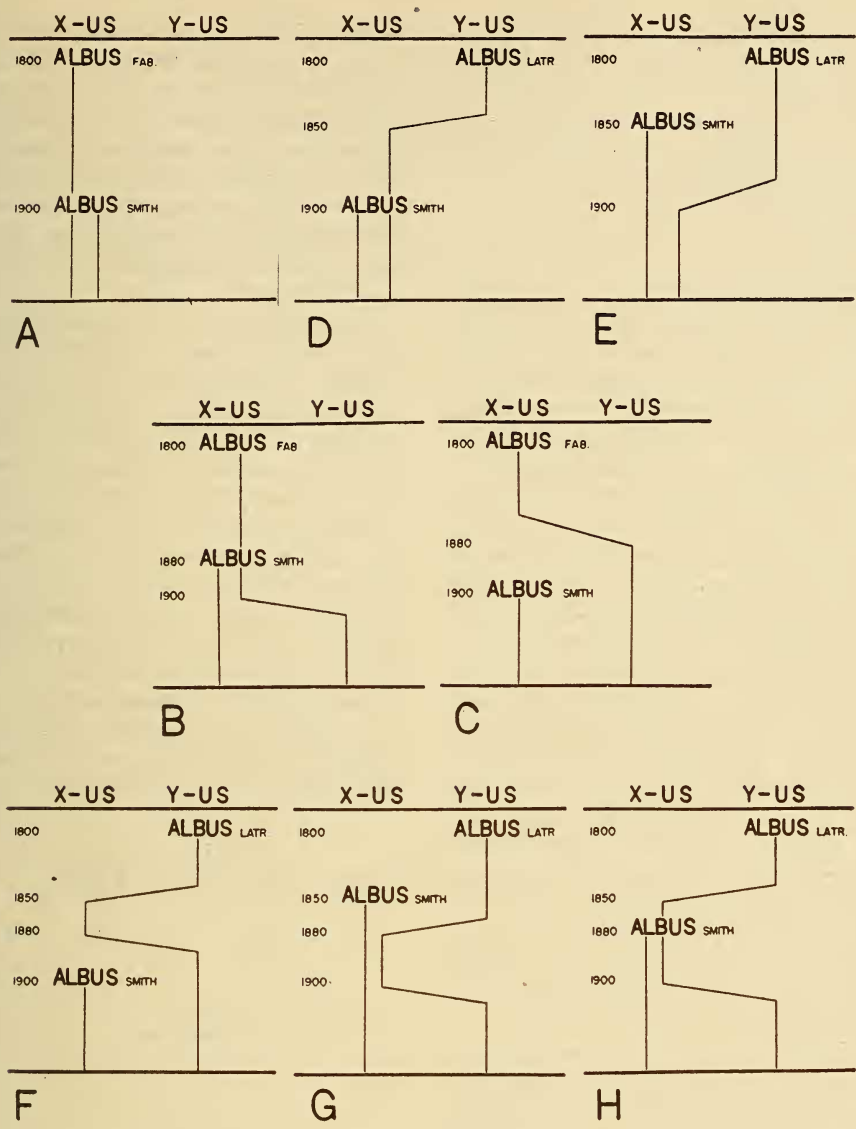


FIG. 5

between primary and secondary, why not judge both types on the same ground?

(IV) Now if we apply this new plan uniformly to all types of homonyms, we need new terms for the ones that are to be replaced and those that are not, to avoid confusion with primary and secondary. We are now interested, in the first place, in the situation as we find it at the time of discovery of the homonymy. (This time is represented by the heavy line across the bottom of each diagram.) The question to be asked is, Is there concurrent use of two names of identical spelling?

In Fig. 5, in A, D, and E two identical names are in use in the genus *X-us* at the present time—they occur together and are therefore *coincident* homonyms. In B, C, F, G, and H the names are not now in the same genus and are therefore homonyms only in an historical sense—only because of their antecedents. We may therefore term them antecedent homonyms.³

³ Other terms may be thought more readily understood in these uses, such as *concurrent* and *historical* or *present* and *past*, but the need for any such terms would be eliminated in a new rule by calling only the first group "homonyms," eliminating the need for any term for the second group.

By replacing only the coincident homonyms, we obtain a rating on the stability tabulation thus:

Method	Change	Keep
I. International Rules	8	0
II. Pri-Sec (original genus)	5	3
III. Pri-Sec (validity when proposed)	7	1
IIIa.	5	3
IV. Coincident-Antecedent	3	5

I should point out here that in this table a very false impression can be made. These figures are the number of *types* of homonyms that require change. One of these types might be much more common than another, completely overshadowing it in importance. But it appears that in number IV, changes are required only in cases which would have had to be changed under all of the other systems as well (A, D, E in Fig. 5), and the remaining cases are an improvement in stability over the other procedures.

A summary of this distinction between coincident and antecedent homonyms can be made by defining them and the treatment of them. *Any name that is discovered to be of the same spelling as an older name currently assigned to the same genus is a COINCIDENT JUNIOR HOMONYM* and is to be replaced. *Any name that is discovered to be of the same spelling as an older name that was at one time in the same genus but is not now so assigned is an ANTECEDENT JUNIOR HOMONYM* and is not to be replaced.

Obviously, an antecedent homonym can become coincident, as would be the case in diagram C if after 1900 the older name was brought back into *X-us*. It is the actual state of affairs at the time of discovery of the homonymy that determines the type of homonymy and the action to be taken.

In some discussions of primary and secondary homonymy there has been proposed another new principle, which is a radical departure from the International Rules in that it requires the revival of a name previously suppressed as a homonym.

In Fig. 6, which represents a case of secondary homonymy in procedure II, *X-us albus* Smith, 1900, required replacing,

even though it was a secondary homonym. It was renamed in 1910 by Jones as *X-us novus*. This is an action that would have been necessary under any of the four procedures we have examined. Then in 1920 *albus* of Latreille, the older name, was removed by Brown from *X-us*; the new procedure would then require that *X-us albus* Smith 1900 be reinstated with *novus* Jones as a synonym.

This appears to be completely contrary to the primary aim of the Rules, which is stability in nomenclature, since it produces an extra name change that is not absolutely necessary. If it stopped here, it would be fairly reasonable, but there is nothing to prevent some other worker from claiming (in 1925 for example) that *albus* of Latreille was correctly transferred to *X-us*, and therefore *novus* must be used for *albus* Smith once again. And in 1926 Brown reiterates his belief that *albus* Latreille does not belong in *X-us*, and therefore *novus* is only a synonym of *X-us albus* Smith.

It is more than possible that such a controversy should continue for years, since there are many cases in which two authors

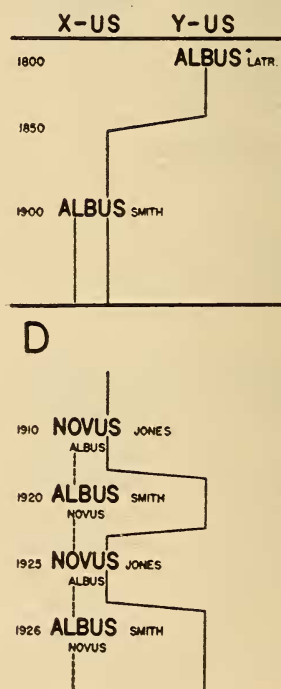


FIG. 6

have consistently used different generic assignments for a given species.

Again, when two workers disagree on the correct generic assignment of a species, as has occurred many times over long periods of years, the first worker, calling the genus *X-us*, finds that *X-us albus* is a secondary homonym, as in D, requiring a new name; whereas simultaneously and equally correctly the second worker, who believes the genus should be called *Z-us*, finds that the name *Z-us albus* is not preoccupied at 1900 and is therefore the correct name for the species. On the basis of their beliefs concerning the generic name, both are correct in their use of the specific names, so that we have two apparently correct names in use for one species.

The possibility of this result from a difference of opinion on generic assignment of another species, or of the correct name for a genus, can not occur under our present Rules. In procedure II as generally stated it can occur in five of the examples. In procedure III it can occur in two of the examples. If the conclusions of this discussion are made part of procedure IV, such a situation could not arise in any case.

The only point that I have seen raised against this principle of accepting a valid renaming in spite of later actions is that malicious transfer could provide the means for some one to rename any species desired, on a small or large scale. I have not found any one who knows of such a case of malicious misappropriation of a rule, and I consider it at best as a possibility of importance insufficient to warrant action designed to prevent it. If a case should occur, the International Commission has ample authority to take action against the offender, without adding to the complexity of our nomenclatural system.

There appears to be no other reasonable course than to accept the valid renaming of a homonym as final. There are other cases in which we find that strict priority gives less stability to names than a carefully controlled departure from priority. And this appears to be an opportunity to prevent the possible (or rather certain) confusion of having two valid trivial names in current use for one species, merely through a difference of opinion concerning the status of some other species which happens to have an identical name.

PROCEEDINGS OF THE ACADEMY

50TH ANNUAL MEETING

The 50th annual meeting, concurrently with the 353d meeting of the Academy, held in the Auditorium of the Cosmos Club, January 15, 1948, was called to order at 8:15 P.M. by the President, WALDO L. SCHMITT, with 55 persons in attendance.

The minutes of the 49th annual meeting were approved as published in the JOURNAL 37: 436-444. 1947.

The reports of several officers and of the Committees of Auditors and Tellers were read and accepted. These reports are recorded at the end of the minutes.

After the acceptance of the report of the Committee of Tellers, the President declared the following duly elected to the given offices:

FREDERICK D. ROSSINI, *President*,
C. LEWIS GAZIN, *Secretary*,
HOWARD S. RAPPLEYE, *Treasurer*,
FRANCIS M. DEFANDORF and WILLIAM N. FENTON, *Board of Managers to January 1951*.

The Secretary presented for the Affiliated Societies their nominations for Vice-Presidents of the Academy as follows:

Philosophical Society of Washington—WALTER RAMBERG
Anthropological Society of Washington—WILLIAM N. FENTON
Biological Society of Washington—JOHN W. ALDRICH
Chemical Society of Washington—CHARLES E. WHITE
Entomological Society of Washington—CARL F. W. MUESEBECK
National Geographic Society—ALEXANDER WETMORE
Geological Society of Washington—WILLIAM W. RUBEN
Medical Society of the District of Columbia—FREDERICK O. COE
Columbia Historical Society—GILBERT GROSVENOR
Botanical Society of Washington—RONALD BAMFORD
Washington Section of the Society of American Foresters—WILLIAM A. DAYTON